

*Amendment to the Drawings*

Please replace Figure 4 with the attached REPLACEMENT SHEET of Figure 4. The attached Figure 4 provides a better copy of the figure.

## REMARKS

### Amendment to Claims

Applicants have amended the claims to better clarify the invention, canceled the non-elected claims 1-3 and 7-11, and added new claims 12-14. Support for these amendments and the new claims is found throughout the specification. For example, support for the amendment to claim 4 can be found, *inter alia*, in paragraph [0027] and Example 1; support for claims 12-13 can be found, *inter alia*, in paragraph [0025]; and support for claim 14 can be found in paragraph [0027]. Accordingly, no new matter is added by these amendments. Entry of these amendments and reconsideration are respectfully requested.

### Objections to the Specification, Claims, and Drawings

The Examiner has made certain objections to the specification, claims, and drawings. Applicants have corrected the specification and claims in the foregoing amendments in accordance with the Examiner's recommendations. Figure 4 was objected as being incomplete. However, Applicants respectfully submit that the figure was not incomplete. Nevertheless, a better copy of the figure is provided herewith as a Replacement Sheet of Figure 4. No new matter has been added by these amendments.

### Sequence Listing Compliance

Applicants filed its Response to the Sequence Listing Compliance on May 24, 2007.

### Rejections under 35 USC 112, Second Paragraph

Claims 4-8 are rejected under 35 USC 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

The Examiner has addressed several issues relating to claim 4 including the language "from the material", "ionically charged species", and "substantially on". Applicants have

amended the claim to obviate the Examiner's rejection to the language in claim 4. Withdrawal of the rejections is respectfully requested.

Rejections under 35 USC 102

Claims 4-6 are rejected under 35 USC 102(a) as allegedly being anticipated by Wong et al. (*Nano Lett.* (2002, June) 2, 583-587). The Office Action states that Wong teaches the preparation of SiO<sub>2</sub>/Au composites that contain self-assembled peptide amphiphiles made by mixing a solution of hydrogen bromide salt of Lys<sub>200</sub>Cys<sub>30</sub> with SiO<sub>2</sub> solution. It is stated that Wong teaches the limitations set forth in claims 4-6. Applicants respectfully traverse the rejection.

The Office Action focuses its attention on Wong's method of using block copolypeptides to synthesize the walls of the hollow sphere nanostructures. However, Wong does not teach or suggest that they are obtaining a mineralized nanofiber gel. The claimed invention, on the other hand, is directed to a method of forming nanofiber networks where the minerals are interspersed throughout the network on the surfaces of the nanofibers. To better clarify the invention, Applicants have amended the claims to be directed to a method of making mineralized nanofibers wherein the minerals nucleate at the nanofiber surfaces. Furthermore, the claims now recite that the first solution contains an ion of the mineral that has the same charge as the peptide amphiphile and the second solution contains an ion of the mineral that has the opposite charge of the peptide amphiphile. Upon combination of these solutions, the nanofiber is formed from the self-assembled network of peptide amphiphiles and minerals nucleate at the surfaces of the nanofibers.

While Wong describes the use of salts in the solutions to form the nanostructures, Wong is deficient in failing to describe the use of ions of minerals that cause the nucleation of minerals on the surface of a network of self-assembling peptide amphiphiles. Wong does not teach or suggest the mineralization of the nanostructures being formed. Accordingly, Wong does not teach each and every element of the claims and withdrawal of the rejection is respectfully requested.

Claims 4-6 are rejected under 35 USC 102(a) as allegedly being anticipated by Slocik et al. (*Nano Lett.* (2002, March) 2, 169-173). The Office Action states that Slocik describes

the preparation of nanomaterials using solutions that satisfy the limitations of claims 4-6. Applicants respectfully traverse the rejection.

Slocik does not teach or suggest the mineralization of self-assembling peptide amphiphiles. As discussed above, the present invention is directed to a method of making mineralized nanofibers. Slocik appears to be relied upon to describe the formation of nanomaterials in which the ionic charges of some of the chemicals in solution are opposite to correspond to original claim 4. However, as discussed above, the claims have been amended to better clarify the invention and to more specifically identify that the “material” being formed on the surfaces of the nanofibers are minerals. Slocik does not describe mineralization of its formed nanomaterials and therefore, does not satisfy each and every element of the claims. Withdrawal of the rejection is respectfully requested.

Conclusion

For the foregoing reasons, Applicants believe that this application is in condition for allowance.

Respectfully submitted,

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By       /Maria L. Maebius/        
Maria L. Maebius  
Attorney for Applicant  
Registration No. 42,967

Benet Group  
c/o Intellevate  
P.O. Box 52050  
Minneapolis MN 55402  
Telephone: 202-253-7199  
Facsimile: 612-677-3572

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